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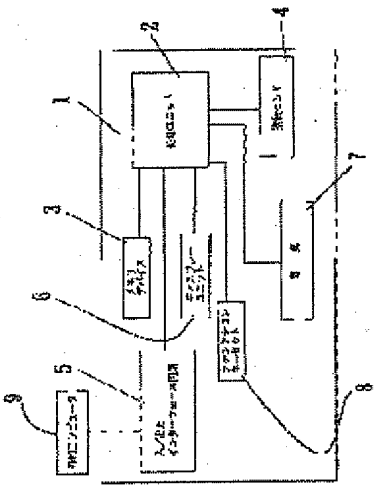
(54) **ELECTRONIC DATA STORAGE MEDIUM CAPABLE OF FINGERPRINT COLLATION**

(57) Abstract:

PROBLEM TO BE SOLVED: To provide an electronic data storage medium capable of fingerprint collation for safety in the transfer of information.

SOLUTION: The electronic data storage medium is accessed by a data terminal. A processing unit 2 is connected to a memory device 3, a fingerprint sensor 4, and an input/output interface 5. The processing unit 2 is capable of operating selectively either in a programming mode where a data file and fingerprint reference data received from the data terminal are stored into the memory device 3 by actuating the input/output interface circuit 5 or in a data retrieval mode where the data file is transferred to the data terminal by actuating the input/output interface circuit 5 when it is judged by matching that a user has the authority of access.



CLAIMS

[Claim(s)]
[Claim 1] In the electronic data carrier accessed by the data terminal The memory device which memorizes the fingerprint reference data obtained by scanning the fingerprint of the person to whom the authority to access a data file and this data file was awarded, The fingerprint sensor scan [sensor] the fingerprint of the user of said electronic data carrier, and it is made to have fingerprint scan data generated, So that the communication link with said data terminal may be established The input-and-output interface circuitry which can operate, Connect with said memory device, a fingerprint sensor, and an input-and-output interface circuitry, and said input-and-output interface circuitry is started. The programming mode in which reception, and the data file and fingerprint reference data are memorized for a data file and fingerprint reference data from said data terminal to said memory device, Reception and these fingerprint scan data are compared with the fingerprint reference data of said memory device for fingerprint scan data from said fingerprint sensor. It collates whether there is any authority for the user of an electronic data carrier to access the data file memorized by said memory device. If it collates that there is authority for the user of an electronic data carrier to access the data file memorized by said memory device The data retrieval mode in which start said input-and-output interface circuitry, and a data file is transmitted to said data terminal, and the electronic data carrier characterized by coming out and having alternatively the processing unit which can operate.
[Claim 2] The electronic data carrier according to claim 1 which has further the body of a card with which said memory device, said input-and-output interface circuitry, and said processing unit were prepared.
[Claim 3] The electronic data carrier according to claim 2 which has further the power source which is prepared in said body of a card, is connected to said processing unit, and supplies power to this processing unit.
[Claim 4] Said memory device is an electronic data carrier according to claim 1 which is a flash plate memory device.
[Claim 5] Said processing unit is an electronic data carrier according to claim 1 which memorizes a data file and fingerprint reference data by compressed format in said memory device.
[Claim 6] It is the electronic data carrier according to claim 1 which can operate so that actuation of said processing unit may be begun in the mode in which connected with said processing unit and said programming mode and data retrieval mode were chosen either.
[Claim 7] Said processing unit is the electronic data carrier according to claim 1 which can operate alternatively in the data reset mode which eliminates a data file and

fingerprint reference data from said memory device.
[Claim 8] It is the electronic data carrier according to claim 7 which can operate so that actuation of said processing unit may be begun in the mode in which connected with said processing unit and said programming mode, data retrieval mode, and data reset mode were chosen either.
[Claim 9] It is the electronic data carrier according to claim 8 which said memory device memorizes a reference password further, and said function key set gives an input password to said processing unit, and will start actuation by data reset mode if it collates that the input password of this processing unit concerned corresponded the input password concerned with said reference password as compared with said reference password.
[Claim 10] Said processing unit is an electronic data carrier according to claim 7 which begins actuation by data reset mode automatically, when it detects that the presetting time interval passed, after memorizing said data file and said fingerprint reference data to said memory device.
[Claim 11] The electronic data carrier according to claim 1 which has further the display unit which shows the data file which is connected to said processing unit, is controlled by this processing unit, and is exchanged for said data terminal.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to an electronic data carrier and the still more detailed electronic data carrier in which fingerprint authentication is possible.
[0002]
[Description of the Prior Art] Although current and a secret data file are memorized by the floppy disk and it is transmitted through a network, a password is required for the network concerned and it is using encryption coding for insurance. A secret document can also attach and send insurance seal paper (safety seals) and seal (impressions) during transmission. However, these have a password, an encryption code and insurance seal paper, and a seal decoded, and are exposed to the danger that the insurance of information transfer will no longer be guaranteed.
[0003]
[Problem(s) to be Solved by the Invention] The purpose of this invention is to offer the electronic data carrier in which fingerprint authentication is possible for the insurance under informational transfer.
[0004]
[Means for Solving the Problem] According to this invention, it is accessed by the data terminal. An electronic data carrier has a memory device, a fingerprint sensor, an input-and-output interface circuitry, and a processing unit.
[0005] A memory device memorizes the fingerprint reference data obtained by scanning the fingerprint of the person to whom the authority to access a data file and this data file was awarded.
[0006] A fingerprint sensor scans the fingerprint of the user of said electronic data carrier, and it is made to have fingerprint scan data generated.
[0007] An input-and-output interface circuitry can operate so that the communication link with said data terminal may be established.
[0008] Connect with said memory device, a fingerprint sensor, and an input-and-output interface circuitry, and a processing unit starts said input-and-output interface circuitry. The programming mode in which reception, and the data file and fingerprint reference data are memorized for a data file and fingerprint reference data from said data terminal to said memory device, Reception and these fingerprint scan data are compared with the fingerprint reference data of said memory device for fingerprint scan data from said fingerprint sensor. It collates whether there is any authority for the user of an electronic data carrier to access the data file memorized by said memory device. If it collates that there is authority for the user of an electronic data carrier to access the data file

memorized by said memory device It can come out with the data retrieval mode in which start said input-and-output interface circuitry, and a data file is transmitted to said data terminal, and can operate alternatively.

[0009]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained according to an accompanying drawing.

[0010] If drawing 1 is referred to, it is indicated that he is trying to be accessed by the external computer 9, and an electronic data carrier contains the body 1 of a card, the processing unit 2, a memory device 3, the fingerprint sensor 4, the input-and-output interface circuitry 5, the display unit 6, a power source 7, and a function key set 8 according to an operation gestalt desirable to this invention.

[0011] A memory device 3 is a flash plate memory device etc., was prepared in the body 1 of a card, and has memorized a data file, a reference password, and the fingerprint reference data obtained by scanning the fingerprint of those who have the authority to access a data file by the well-known approach. A data file can be made into an image file or a text file.

[0012] The fingerprint sensor 4 is formed in the body 1 of a card, scans the fingerprint of the user of an electronic data carrier, and generates fingerprint scan data. Although an example of the fingerprint sensor which can be used by this invention has some which are indicated by United States patent application of the coincidence continuation for which the applicant for this patent applied, and the name "the integrated circuit card (INTEGRATEDCIRCUIT CARD WITH FINGERPRINT VERIRFICATION CAPABILITY) in which fingerprint authentication is possible" of invention, all the contents of an indication are constructed and included in this application specification.

[0013] The input-and-output interface circuitry 5 is PCMCIA or RS232 interface etc., is prepared in the body 1 of a card, and it can operate so that the communication link with an external computer 9 may be established.

[0014] The processing unit 2 is formed in the body 1 of a card, and is connected to the memory device 3, the fingerprint sensor 4, and the input-and-output interface circuitry 5. The processing unit 2 can operate alternatively in the following mode.

Programming mode: The processing unit 2 starts the input-and-output interface circuitry 5, memorizes reception, and the data file and fingerprint reference data for a data file and fingerprint reference data from an external computer 9 by compressed format to a memory device 3, and increases the storage capacity of a memory device 3.

The processing unit 2 fingerprint scan data from the fingerprint sensor 4 Data retrieval mode (data retrieving mode) : Reception, These fingerprint scan data are compared with at least one segment of the fingerprint reference data of a memory device 3. It collates whether there is any authority for the user of an electronic data carrier to access the data file memorized by the memory device 3 (verify). If it collates that there is authority for the user of an electronic data carrier to access the data file memorized by the memory device 3, the input-and-output interface circuitry 5 will be started, and a data file will be transmitted to an external computer 9.

Data reset mode: Eliminate a data file and fingerprint reference data from a memory device 3.

[0015] It is prepared in the body 1 of a card, and connects with the processing unit 2, and a power source 7 supplies power to this processing unit.

[0016] it is prepared in the body 1 of a card, and connects with the processing unit 2, and a function key set 8 begins actuation of the processing unit 2 in the mode chosen among programming mode, data retrieval mode, and data reset mode (initiate) -- it can operate like. A function key set 8 can operate so that an input password may be given to the processing unit 2. Collating of that the input password of the processing unit 2 corresponds an input password with a reference password as compared with the reference password in a memory device 3 begins actuation of data reset mode.
[0017] It is prepared in the body 1 of a card, and connects with a processing unit, and the display unit 6 is controlled by this processing unit, in order to show the data file exchanged for the external computer 9, and the status of an electronic data carrier of operation.
[0018] After the processing unit 2 memorizes the data file and fingerprint reference data in a memory device 3, when it detects that the presetting time interval (preset time period) passed, it is desirable to begin actuation of data reset mode automatically.
[0019] Although this invention was explained above about what is considered to be a most practical and desirable operation gestalt, this invention is not limited to the indicated operation gestalt, and also includes the correction and equal configuration further including the various configurations included the pneuma of this invention, and within the limits of the most extensive interpretation.
[0020]
[Effect of the Invention] The effectiveness of this invention is as follows.
1. Although magnitude is small, an electronic data carrier becomes convenient [data transfer], as a result of having big memory capacity in a compression format.
2. Since people have a different fingerprint from others, as a result of only people with authority being able to access the data file memorized there, safety of an electronic data carrier improves.

[Translation done.]

TECHNICAL FIELD

[Field of the Invention] This invention relates to an electronic data carrier and the still more detailed electronic data carrier in which fingerprint authentication is possible.

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[Description of the Prior Art] Although current and a secret data file are memorized by the floppy disk and it is transmitted through a network, a password is required for the network concerned and it is using encryption coding for insurance. A secret document can also attach and send insurance seal paper (safety seals) and seal (impressions) during transmission. However, these have a password, an encryption code and insurance seal paper, and a seal decoded, and are exposed to the danger that the insurance of information transfer will no longer be guaranteed.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] The purpose of this invention is to offer the electronic data carrier in which fingerprint authentication is possible for the insurance under informational transfer.

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MEANS

[Means for Solving the Problem] According to this invention, it is accessed by the data terminal. An electronic data carrier has a memory device, a fingerprint sensor, an input-and-output interface circuitry, and a processing unit.
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including the various configurations included the pneuma of this invention, and within the limits of the most extensive interpretation.

[Translation done.]

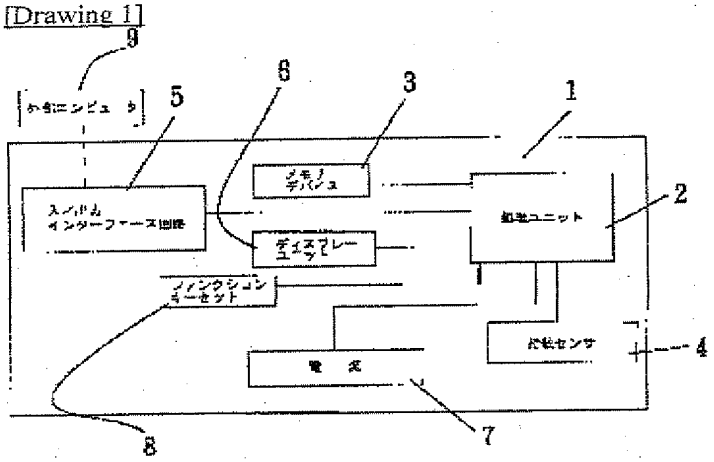
DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The circuit block diagram showing the desirable example of the electronic data carrier by this invention.
[Description of Notations]
1 Body of Data Card
2 Processing Unit
3 Memory Device
4 Fingerprint Sensor
5 Input-and-Output Interface Circuitry
6 Display Unit
7 Power Source
8 Function Key Set
9 External Computer

[Translation done.]

DRAWINGS

[Drawing 1]



[Translation done.]